

4.X Data Access Layer

COP TWG
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Data Access Layer

- DAL Requirements
 - The Data Access Layer will isolate segment developers and external systems from changes to data schema and data business rules of the ISDS databases.
 - The Data Access Layer will be developed such that changes to data schema and data business rules will not require changes to segments and external systems.

Data Access Layer

- DAL Goals
 - Provide the GCCS-I³ and GCCS-M developer communities with an extensible set of distributed C4I objects
 - C4I domain objects will make access easier to more complicated database entities such as MIDB

Data Access Layer

Key Engineering Decisions

- TopLink Object/Relational Mapping Tool
 - Object mappings to non-object-based persistent stores
 - 100% Pure Java
 - No run-time licensing fees
 - Version available which provides a mapping to EJB
 - Support for Intel/NT and SPARC/Solaris systems
 - Object/Relational Mapping support for Tie Table-type joins
 - Object caching for increased performance
- Provide a Query Object

Data Access Layer

Key Engineering Decisions

(Cont'd)

- Schema change isolation
 - I3DAL interfaces unchanged by RDBMS changes
- Query on any predefined attributes in an object
- Utilize EJB Server Transaction service
 - Atomic writes of objects to database
 - Consistent data
 - Isolation
 - Durable

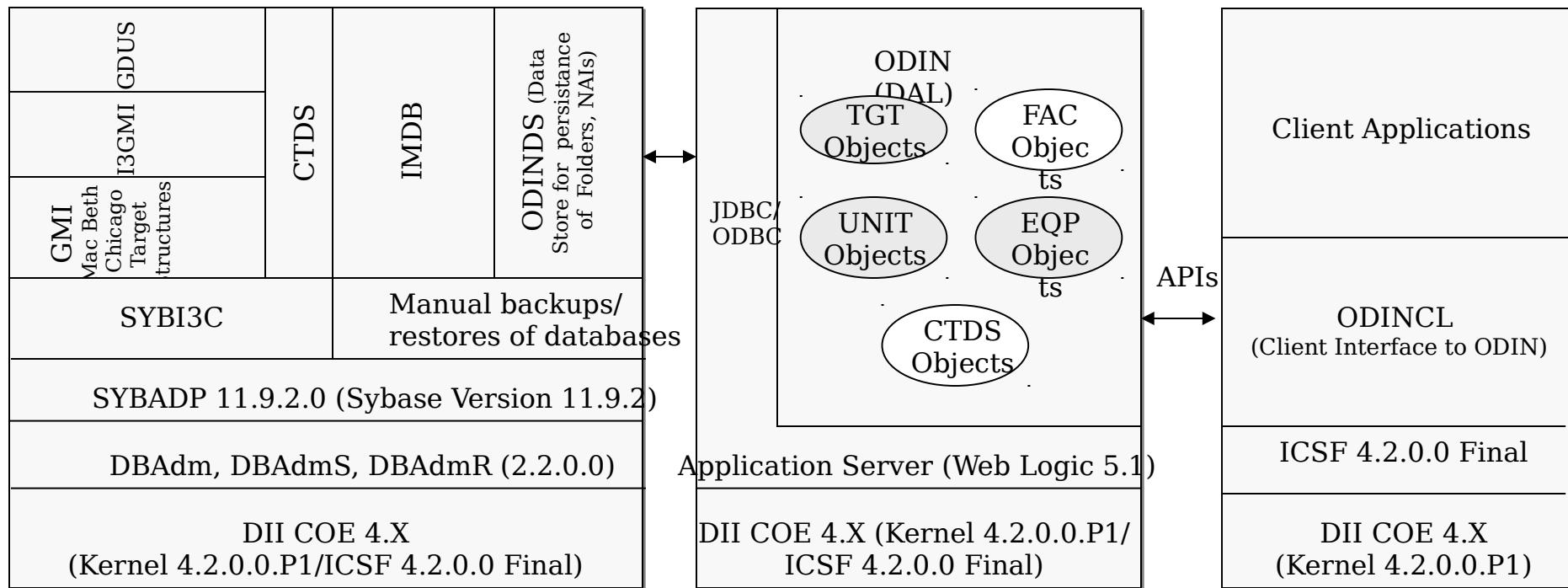
Data Access Layer

Key Engineering Decisions

(Cont'd)

- Applicable to multiple architectures
 - Enterprise Java Beans
 - » Session Beans
 - » Entity Beans
 - CORBA
 - Application server
- One object at a time
 - Multiple client references to a single object
- Caching of Objects
 - Fast access to frequently used objects

4.X Build 3 Architecture



Solaris ISDS

Solaris Middle Tier

**Solaris/NT
Client Workstation**

Data Access Layer

Client Access

- How do external systems begin using the DAL?
 - Software Developer's Kit (SDK)
 - » API Reference Manual
 - Will specify segments needed
 - » **JAVA Doc**
 - » Sample Source that uses DAL objects
 - Future ways to access
 - » HTML/JSP, Servlets

Example Code To Use The DALQuery Enterprise Java Bean

```
Context ctx = getInitialContext();
DALQueryHome queryhome =
    (DALQueryHome) ctx.lookup("i3.intel.query.DALQuery");
If (queryhome != null) {
//xmlstring = getXMLString();
//this string must follow the dalquery.dtd
DALQuery query = queryhome.create();
Collection results = query.execute(xmlstring);
}
```

Data Access Layer Schedule

- SDK Deliveries
 - 3/3/00
 - 4/24/00 (Build 3)
 - 7/10/00 (Build 3.1)
 - 9/5/00 (Build 4)